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| Claim | In one sentence, directly and clearly states the idea that the length of an object affects the pitch it produces. (*The length of an object effects the pitch it produces.)* | In one sentence, directly states the idea that the length of an object affects the pitch it produces. (*Length effects pitch.)* | In one sentence, my claim states the correct concept, but does not use scientific vocabulary. (*Big things make a low sound.)* | My claim does not respond to the question, or is inaccurate. |
| Evidence | I use at least 3 pieces of data from investigations that relate to length, pitch, and rate of back and forth motion. When available, uses quantitative and qualitative data. (*The longer meter stick (80 cm) had a lower pitch and slower vibrations and the shorter meter stick (20 cm) had a higher pitch and faster vibrations.*)  \*May also use the term *frequency.* | I use at least 3 pieces of data from investigations that relate to length and pitch. When available, uses quantitative and qualitative data. (*The longer meter stick (80 cm) had a lower pitch and the shorter meter stick (20 cm) had a higher pitch.)* | Uses 2 pieces of data from investigations that relate to length and pitch, OR 3 pieces of data that are incomplete. (*The longer meter stick had a lower pitch. The longer nail also had a lower pitch.)* | Uses 1 piece of data from investigations that relate to length and pitch, or uses incomplete data. |
| Reasoning | Uses concept of pitch/frequency to explain why their evidence supports their claim in a definitive way. (*The longer meter stick has a lower pitch* ***because*** *it is vibrating at a slower rate than the shorter meter stick. Therefore, I know that the longer an object, the lower the frequency and the lower the pitch.)* | Gesturing towards use of a science concept to explain why the evidence supports the claim. May not use expert vocabulary or may use it but not fully explain it. (*I saw that the longer objects vibrated slower and had a low pitch, but the shorter objects vibrated faster and had a high pitch. Therefore, I know that length affects the pitch of an object.)* | Restates the claim without an explanation of why evidence “counts.” (*Length affects pitch.)* | No reasoning statement or unrelated reasoning statement. (*Rulers are made of plastic.)* |